

Review of: "Critical Review on Carbon Nanomaterial Based Electrochemical Sensing of Dopamine the Vital Neurotransmitter"

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Potential competing interests: No potential competing interests to declare.

For the manuscript titled "Critical Review on Carbon Nanomaterial Based Electrochemical Sensing of Dopamine, the Vital Neurotransmitter," several major revisions are necessary to enhance clarity, coherence, and scientific rigor:

Abstract Clarity: The abstract, while informative, should be more concise. Focus on summarizing the key findings and implications of the review rather than reiterating background information. Clearly state the objectives, methodology, and significance of the review in fewer words.

Literature Review Depth: The introduction section lacks a critical evaluation of existing literature. A more comprehensive comparison of current diagnostic methods versus electrochemical sensing techniques should be included. Highlight specific studies that have made significant contributions to the field to provide context for the advancements discussed.

Methodological Rigor: When discussing electrochemical sensing methods, detail the specific advantages and disadvantages of each technique (e.g., cyclic voltammetry, DPV, etc.) in the context of dopamine sensing. This includes not just their operational parameters but also their practical applications and limitations in clinical settings.

Integration of Nanomaterials: The section on carbon nanomaterials could benefit from a deeper exploration of their unique properties and how these contribute to improved sensing capabilities. Discuss specific examples of nanomaterials used and their respective mechanisms of action.

Commercialization Discussion: The review should provide a more detailed assessment of the challenges faced in the commercialization of these technologies. Address issues such as regulatory hurdles, manufacturing scalability, and market readiness, along with potential strategies to overcome these challenges.

Future Perspectives: Expand the section on future challenges to include specific research directions that could lead to breakthroughs in dopamine sensing technologies. Discuss potential interdisciplinary collaborations and emerging technologies that could impact the field.

Figures and Tables: Incorporate figures and tables that summarize key data, comparisons of methodologies, and potential future applications. Visual aids can enhance understanding and retention of complex information.

References and Citations: Ensure all references are current and relevant. Consider integrating more recent studies to reflect the latest advancements in the field. Citations should be consistently formatted and accurately reflect the contributions of each source.

Technical Language: While the manuscript is intended for a specialized audience, ensure that technical jargon is well-defined upon first use. This will make the review more accessible to a broader readership, including those who may not specialize in electrochemical sensing.

Proofreading and Editing: Finally, a thorough proofreading is necessary to eliminate grammatical errors and enhance the overall readability of the manuscript. Pay attention to the flow of ideas and the logical structure of the sections.

By addressing these points, the manuscript can provide a more robust and comprehensive overview of the current state of dopamine sensing technologies, their clinical significance, and the role of carbon nanomaterials in advancing this field.